

# THE JOURNAL OF HORTICULTURAL SCIENCE

## BOARD OF EDITORS

### Editor:

G. E. TIDBURY, B.Sc., A.R.C.S., A.I.C.T.A., F.I.Biol., Commonwealth Bureau of Horticulture and Plantation Crops, East Malling Research Station, Maidstone, Kent ME 19 6BJ.

### Associate Editors:

- A. I. CAMPBELL, M.Sc., Ph.D., N.D.H., M.I.Biol., Long Ashton Research Station, University of Bristol, Bristol BS18 9AF.  
K. E. COCKSHULL, B.Sc., Ph.D., Glasshouse Crops Research Institute, Worthing Road, Rustington, Littlehampton, Sussex.  
M. S. PARRY, B.A., M.A., East Malling Research Station, Maidstone, Kent ME19 6BJ.  
A. R. REES, B.Sc., D.Sc., F.I.Biol., Glasshouse Crops Research Institute, Worthing Road, Rustington, Littlehampton, Sussex.  
A. A. RUTHERFORD, M.Agr., Ph.D., East Malling Research Station, Maidstone, Kent ME19 6BJ.  
P. J. SALTER, B.Sc., Ph.D., National Vegetable Research Station, Wellesbourne, Warwick.  
W. W. SCHWABE, D.I.C., Ph.D., D.Sc., Wye College, Nr. Ashford, Kent.  
I. W. SELMAN, D.Sc., Wye College, Nr. Ashford, Kent.  
R. O. SHARPLES, B.Sc., Ph.D., East Malling Research Station, Maidstone, Kent ME19 6BJ.  
C. E. TAYLOR, B.Sc., Ph.D., F.I.Biol., Scottish Horticultural Research Institute, Invergowrie, Dundee, Angus.  
H. D. TINDALL, M.B.E., M.Sc., F.L.S., F.I.Biol., C.I.Agr.E., N.D.H., National College of Agricultural Engineering, Silsoe, Bedford, MK45 4DT.  
L. D. TUKEY, B.S., M.S., Ph.D., Department of Horticulture, 103 Tyson Building, The Pennsylvania State University, University Park, PA 16802, USA.  
D. VINCE-PRUE, Ph.D., M.S., N.D.H., Glasshouse Crops Research Institute, Worthing Road, Rustington, Littlehampton, Sussex.  
P. D. WAISTER, B.Sc., Ph.D., Scottish Horticultural Research Institute, Invergowrie, Dundee, Angus.  
D. WILSON, B.Sc., Ph.D., M.I.Biol., Long Ashton Research Station, University of Bristol, Bristol BS18 9AF.

## PUBLICATION COMMITTEE

- P. HUDSON, C.B.E., M.B.E.(Mil.), G.M., M.Sc., Ph.D., N.D.H., F.I.Biol., V.M.H. (Chairman)  
J. BEDDING, B.Sc., M.Sc., N.D.H.  
K. A. BLEASDALE, B.Sc., Ph.D.  
BROADBENT, Ph.D., D.Sc., F.I.Biol., V.M.M.  
J. GRAHAM-BRYCE, B.A., M.A., B.Sc., D.Phil.  
V. S. HEATH, D.Sc., F.R.S.  
C. HERWIN, N.D.H.  
M. HIRST, D.Sc., Ph.D., F.R.S.  
HUSSEY, Ph.D.  
H. PITT  
F. POSNETTE, C.B.E., Sc.D., Ph.D., A.I.C.T.A., F.I.Biol., F.R.S.  
D. RUDD-JONES, M.A., Ph.D., F.I.Biol.  
W. W. SCHWABE, D.I.C., Ph.D., D.Sc.  
C. E. TAYLOR, B.Sc., Ph.D., F.I.Biol.  
G. E. TIDBURY, B.Sc., A.R.C.S., A.I.C.T.A., F.I.Biol.  
H. D. TINDALL, M.B.E., M.Sc., F.L.S., F.I.Biol., C.I.Agr.E., N.D.H.  
F. R. TUBBS, C.B.E., M.Sc., Ph.D., F.I.Biol., V.M.H.  
C. D. WALKER, B.Sc.  
R. L. OXLEY, M.B.I.M. (Secretary)

**VOL. 55**  
**1980**

**HEADLEY BROTHERS LTD**  
The Invicta Press, Ashford, Kent  
England

# THE JOURNAL OF ORTICULTURAL SCIENCE

MONTHLY JOURNAL

CONTENTS

THE JOURNAL OF ORTICULTURAL SCIENCE, Vol. 32, 1980, No. 1, January, pp. i-iv.

1. The effect of temperature on the growth of the tomato plant (Lycopersicon esculentum L.) in the glasshouse. J. H. B. B. & J. H. B. B. 1

2. The effect of temperature on the growth of the tomato plant (Lycopersicon esculentum L.) in the glasshouse. J. H. B. B. & J. H. B. B. 1

3. The effect of temperature on the growth of the tomato plant (Lycopersicon esculentum L.) in the glasshouse. J. H. B. B. & J. H. B. B. 1

4. The effect of temperature on the growth of the tomato plant (Lycopersicon esculentum L.) in the glasshouse. J. H. B. B. & J. H. B. B. 1

5. The effect of temperature on the growth of the tomato plant (Lycopersicon esculentum L.) in the glasshouse. J. H. B. B. & J. H. B. B. 1

6. The effect of temperature on the growth of the tomato plant (Lycopersicon esculentum L.) in the glasshouse. J. H. B. B. & J. H. B. B. 1

7. The effect of temperature on the growth of the tomato plant (Lycopersicon esculentum L.) in the glasshouse. J. H. B. B. & J. H. B. B. 1

8. The effect of temperature on the growth of the tomato plant (Lycopersicon esculentum L.) in the glasshouse. J. H. B. B. & J. H. B. B. 1

9. The effect of temperature on the growth of the tomato plant (Lycopersicon esculentum L.) in the glasshouse. J. H. B. B. & J. H. B. B. 1

10. The effect of temperature on the growth of the tomato plant (Lycopersicon esculentum L.) in the glasshouse. J. H. B. B. & J. H. B. B. 1

ADVERTISING INFORMATION

For details of advertising rates and conditions, please apply to the publishers, The Invicta Press, Ashford, Kent, or to the publishers, The Invicta Press, Ashford, Kent.

For details of advertising rates and conditions, please apply to the publishers, The Invicta Press, Ashford, Kent, or to the publishers, The Invicta Press, Ashford, Kent.

For details of advertising rates and conditions, please apply to the publishers, The Invicta Press, Ashford, Kent, or to the publishers, The Invicta Press, Ashford, Kent.

For details of advertising rates and conditions, please apply to the publishers, The Invicta Press, Ashford, Kent, or to the publishers, The Invicta Press, Ashford, Kent.

For details of advertising rates and conditions, please apply to the publishers, The Invicta Press, Ashford, Kent, or to the publishers, The Invicta Press, Ashford, Kent.

For details of advertising rates and conditions, please apply to the publishers, The Invicta Press, Ashford, Kent, or to the publishers, The Invicta Press, Ashford, Kent.

For details of advertising rates and conditions, please apply to the publishers, The Invicta Press, Ashford, Kent, or to the publishers, The Invicta Press, Ashford, Kent.

For details of advertising rates and conditions, please apply to the publishers, The Invicta Press, Ashford, Kent, or to the publishers, The Invicta Press, Ashford, Kent.

For details of advertising rates and conditions, please apply to the publishers, The Invicta Press, Ashford, Kent, or to the publishers, The Invicta Press, Ashford, Kent.

For details of advertising rates and conditions, please apply to the publishers, The Invicta Press, Ashford, Kent, or to the publishers, The Invicta Press, Ashford, Kent.

VOL. 32  
1980

HEADLEY BROTHERS LTD  
The Invicta Press, Ashford, Kent



# TABLE OF CONTENTS

THE JOURNAL OF HORTICULTURAL SCIENCE, Vol. 55

No. 1 (JANUARY 1980)

M.A. EASTERBROOK: The host range of a 'non-gall-forming' eriophyid mite living in buds on <i>Ribes</i> .. .. .	1-6
A. CALVERT and G. SLACK: Effects of light-dependent control of day temperature on the yields of early-sown tomatoes .. .. .	7-13
C. A. THOMAS: A new rootstock for rose budding in Nigeria .. .. .	15-17
A. D. WEBSTER: Flower and fruitlet thinning of the plum ( <i>Prunus domestica</i> L.) cv Victoria .. .. .	19-26
D. S. SKENE: Growth stresses during fruit development in Cox's Orange Pippin apples .. .. .	27-32
J. N. KNIGHT: Regulation of cropping and fruit quality of Conference pears by the use of gibberellic acid and thinning. I. The effect of hand thinning of blossom in conjunction with gibberellic acid application .. .. .	33-39
C. B. JOSEPH and K. V. PETER: Effect of 2, 4-dichlorophenoxyacetic acid on fruit yield, leaf area and flower characters in tomato .. .. .	41-43
M. J. TSUJITA and W. E. CRAIG: Reduced night temperature effects on poinsettias .. .. .	45-47
P. E. BACON: Effects of dwarfing inoculations on the growth and productivity of Valencia oranges .. .. .	49-55
T. L. LEWIS: The rate of uptake and longitudinal distribution of potassium, calcium and magnesium in the flesh of developing apple fruits of nine cultivars .. .. .	57-63
B. W. W. GROUT and P. CRISP: The origin and nature of shoots propagated from cauliflower roots .. .. .	65-70
G. G. THOMAS: Weather factors controlling the alpha-acid content of hops ( <i>Humulus lupulus</i> L.) .. .. .	71-77
V. HEATHER OEHL and HILARY M. HUGHES: The field performance of a clone of Cambridge Prizewinner strawberry, freed from latent virus A by meristem culture .. .. .	79-82
ANA M. VIEITEZ and M. LUISA VIEITEZ: Culture of chestnut shoots from buds <i>in vitro</i> . (Research Note) .. .. .	83-84
E. A. BAKER and J. PROCOPIOU: Effect of soil moisture status on leaf surface wax yield of some drought-resistant species. (Research Note)	85-87

P. ADAMS, C. J. GRAVES and G. W. WINSOR: Some effects of micro-nutrients and liming on the production and quality of glasshouse carnations grown in a peat-sand substrate .. .. .	89-96
J. L. BREWSTER and P. J. SALTER: The effect of plant spacing on the yield and bolting of two cultivars of overwintered bulb onions .. ..	97-102
J. B. SWEET: Fruit tree virus infections of ornamental rosaceous trees and shrubs .. .. .	103-111
D. S. SKEENE: Effect of supplementary dimethoate sprays on russetting of Golden Delicious apples .. .. .	113-117
H. INSLEY and R. C. BOSWELL: The enhancement of the chemical defoliation of amenity tree nursery stock, <i>Betula pendula</i> Roth, <i>Alnus incana</i> (L.) Moench, <i>Carpinus betulus</i> L. and <i>Platanus</i> $\times$ <i>hispanica</i> Muenchh., by ethephon pretreatment .. .. .	119-125
A. R. MENZIES: Timing, selectivity and varietal response to mechanical thinning of apples and pears .. .. .	127-131
A. A. J. SWAIT: Field observations on disease susceptibility, yield and agronomic character of some new raspberry cultivars .. ..	133-137
D. C. ADJEI-TWUM: The influence of bulb size and bulb cutting on the growth and yield of shallots ( <i>Allium cepa</i> var. <i>aggregatum</i> G. Don.) in Ghana .. .. .	139-143
D. S. SKENE: Estimating potential blossom on Cox's Orange Pippin apple shoots by forcing isolated buds .. .. .	145-148
J. E. JACKSON and P. J. C. HAMER: The causes of year-to-year variation in the average yield of Cox's Orange Pippin apple in England ..	149-156
P. J. C. HAMER: A model to evaluate evaporative cooling of apple buds as a frost protection technique .. .. .	157-163
D. T. MASON: The measurement of mechanical harvester efficiency on the red raspberry ( <i>Rubus idaeus</i> L.) using three methods of estimating berry ripeness .. .. .	165-170
B. H. HOWARD: Moisture change as a component of disbudding responses in studies of supposed relationships between bud activity and rooting in leafless cuttings .. .. .	171-180
F. R. TUBBS: Growth relations of rootstock and scion in apples .. ..	181-189
A. F. LANA: Transmission and properties of viruses isolated from <i>Carica papaya</i> in Nigeria .. .. .	191-197
M. K. S. A. SAMARAWEEERA and D. G. HILL-COTTINGHAM: Uptake, distribution and persistence of $^{14}\text{C}$ -labelled N-dimethylamino-succinamic acid in fruiting apple trees .. .. .	199-205



## No. 3 (JULY 1980)

B. M. EL-ZEFTAWI: Effects of various abscissants on the removal of lemon fruits .. .. .	207-210
B. M. EL-ZEFTAWI: Regulating pre-harvest fruit drop and the duration of the harvest season of grapefruit with 2,4-D and GA .. .. .	211-217
S. S. ABOU-HAIDAR, E. FERRERES and R. W. HARRIS: Drought adaptation of two species of <i>Cotoneaster</i> .. .. .	219-227
B. A. KRATKY, E. F. COX and J. M. T. MCKEE: Effects of block and soil water content on the establishment of transplanted cauliflower seedlings .. .. .	229-234
J. L. BREWSTER and P. J. SALTER: A comparison of the effects of regular versus random within-row spacing on the yield and uniformity of size of spring-sown bulb onions .. .. .	235-238
R. MENHENETT: Chemical control of shoot growth and axillary inflorescence development in <i>Chrysanthemum morifolium</i> Ramat with 2,3-dihydro-5,6-diphenyl-1,4-oxathiin .. .. .	239-246
K. A. HATRIDGE-ESH and J. P. BENNETT: Effects of seed weight, plant density and spacing on yield responses of onion .. .. .	247-252
G. D. WESTON and T. H. THOMAS: The effects of some growth retardants on the growth of shoots and storage roots of radish .. .. .	253-257
V. HEATHER OEHL: The long-term effects of pre-planting soil fumigation on the growth and cropping of cvs Laxton's Fortune and Cox's Orange Pippin on M.2 rootstock, planted on land affected with a replant disease of apple .. .. .	259-266
J. N. KNIGHT: Fruit thinning of the apple cultivar Cox's Orange Pippin .. .. .	267-273
R. R. WILLIAMS and VALERIE A. FLOOK: The mode of action of the hormone apple fruit-setting mixture PP341B applied to Cox's Orange Pippin .. .. .	275-277
H. W. B. BARLOW: The relationship between leaf size and shoot length in apple .. .. .	279-283
R. G. MOBAYEN: Germination and emergence of citrus and tomato seeds in relation to temperature .. .. .	285-289
R. G. MOBAYEN: Germination of trifoliate orange seed in relation to fruit development, storage and drying .. .. .	291-297
T. L. ROST and MAUD A. W. HINCHEE: Preliminary report on the production of callus, organogenesis and regeneration of jojoba ( <i>Simmondsia chinensis</i> , Link, Schneid.) in tissue culture .. .. .	299-305
J. VAN DER BOON: Prediction and control of bitter pit in apples. I. Prediction based on mineral leaf composition, cropping levels and summer temperatures .. .. .	307-312
J. VAN DER BOON: <i>Idem</i> . II. Control by summer pruning, fruit thinning, delayed harvesting and soil calcium dressings .. .. .	313-321

EDITORIAL NOTE .. .. .	323-324
K. N. WEAVER: Field emergence of calabrese and onion seedlings in response to compaction treatments on the soil surface or at seed depth .. .. .	325-332
C. A. PONTIKIS, M. LOUKAS and G. KOUSOUNIS: The use of biochemical markers to distinguish olive cultivars .. .. .	333-343
S. P. GACHANJA and A. M. GURNAH: Pruning and trellising purple passion fruit. I. Yields and seasonal trends .. .. .	345-349
A. M. GURNAH and S. P. GACHANJA: <i>Idem</i> . II. Disease incidence, fruit size and quality .. .. .	351-354
Z. S. WOCHOK and CAROLYN J. SLUIS: <i>In vitro</i> propagation and establishment of wax currant ( <i>Ribes inebrians</i> ) .. .. .	355-357
R. R. WILLIAMS, GILLIAN M. ARNOLD, VALERIE A. FLOOK and C. J. JEFFERIES: The effect of picking date on blossoming and fruit set in the following year for the apple cv Bramley's Seedling .. .. .	359-362
VICTORIA H. KNIGHT: Responses of red raspberry cultivars and selections to <i>Botrytis cinerea</i> and other fruit-rotting fungi .. .. .	363-369
ELAINE M. SAUVE and R. S. SHIEL: Coating seeds with polyvinyl resins .. .. .	371-373
N. L. WADE and JOAN M. BAIN: Physiological and anatomical studies of surface pitting of sweet cherry fruit in relation to bruising, chemical treatments and storage conditions .. .. .	375-384
N. NII: Seasonal changes in growth and enlargement of the Japanese pear fruit, <i>Pyrus serotina</i> cv Shinsheiki, in relation to vascular bundle development in the pedicel and flesh .. .. .	385-396
A. DALE and PAULINE B. TOPHAM: Fruiting structure of the red raspberry: multivariate analysis of lateral characteristics .. .. .	397-408
W. G. TUCKER, R. L. K. DREW, C. M. WARD and P. P. RUTHERFORD: The effects of lifting date and storage temperature on the keeping quality of beetroots .. .. .	409-414
P. I. ORPHANOS and I. PAPADOPOULOS: The nitrogen, phosphorus and potassium requirements of tomatoes grown in pots and in the soil in unheated plastic greenhouses in Cyprus .. .. .	415-423
A. D. WEBSTER: Pixy, a new dwarfing rootstock for plums, <i>Prunus domestica</i> L. .. .. .	425-431
S. D. KHANDUJA and V. K. GARG: Nutritional status of guava ( <i>Psidium guajava</i> L.) trees in North India. ( <i>Research Note</i> ) .. .. .	433-435
M. F. ABBAS, J. D. QUINLAN and W. R. BUCKLEY: Influence of early-season temperature on the growth and branching of newly-grafted apple trees. ( <i>Research Note</i> ) .. .. .	437-438
M. S. PARRY: Evidence of clonal variation and latent virus effect on the vigour of Cox's Orange Pippin apple trees on M.9 rootstocks. ( <i>Research Note</i> ) .. .. .	439-440





